

NASA TECH BRIEF

Goddard Space Flight Center



NASA Tech Briefs announce new technology derived from the U.S. space program. They are issued to encourage commercial application. Tech Briefs are available on a subscription basis from the National Technical Information Service, Springfield, Virginia 22151. Requests for individual copies or questions relating to the Tech Brief program may be directed to the Technology Utilization Office, NASA, Code KT, Washington, D.C. 20546.

Cloud-Free Resolution Element Statistics Program

The problem:

To eliminate the human error inherent in using visual estimation to compute cloud statistics from aerial photographs.

The solution:

A computer program which computes the number of cloud-free elements in a field-of-view as a function of varying element size and computes the percentage of the total field-of-view occupied by clouds.

How it's done:

The program uses digital intensity data generated from the photograph by a spot scanner and transferred into six-bit words onto a magnetic tape. The intensity threshold for cloud background separation is selected, and the intensity data is used in conjunction with this threshold to convert intensity levels into cloud and no-cloud integers. Roads and spurious points are eliminated by converting to zeros those cloud-scan lengths which are less than empirically determined values. Insignificant cloud

amounts are also eliminated. The accumulated cloud-free resolution elements are normalized relative to the total number of resolution elements to obtain cloud-free percentages.

Notes:

1. This program is written in FORTRAN IV for use on the IBM-360 system.
2. Requests for further information may be directed to:

COSMIC
112 Barrow Hall
University of Georgia
Athens, Georgia 30601
Reference: B71-10463

Patent status:

No patent action is contemplated by NASA.

Source: C. D. Martin and B. Liley of
North American Rockwell Corp.
under contract to
Goddard Space Flight Center
(GSC-11494)

Category 09